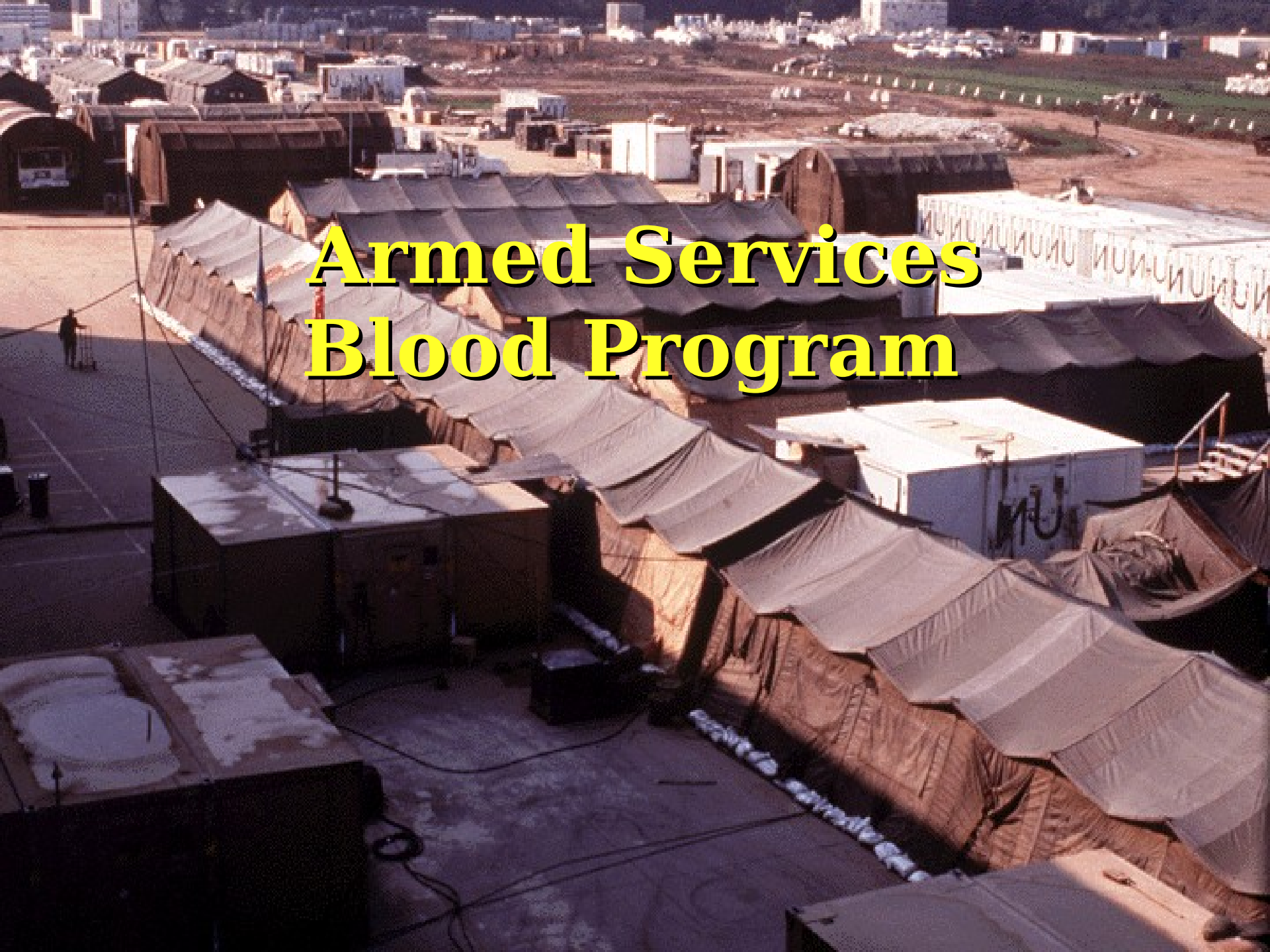

Armed Services
Blood Program

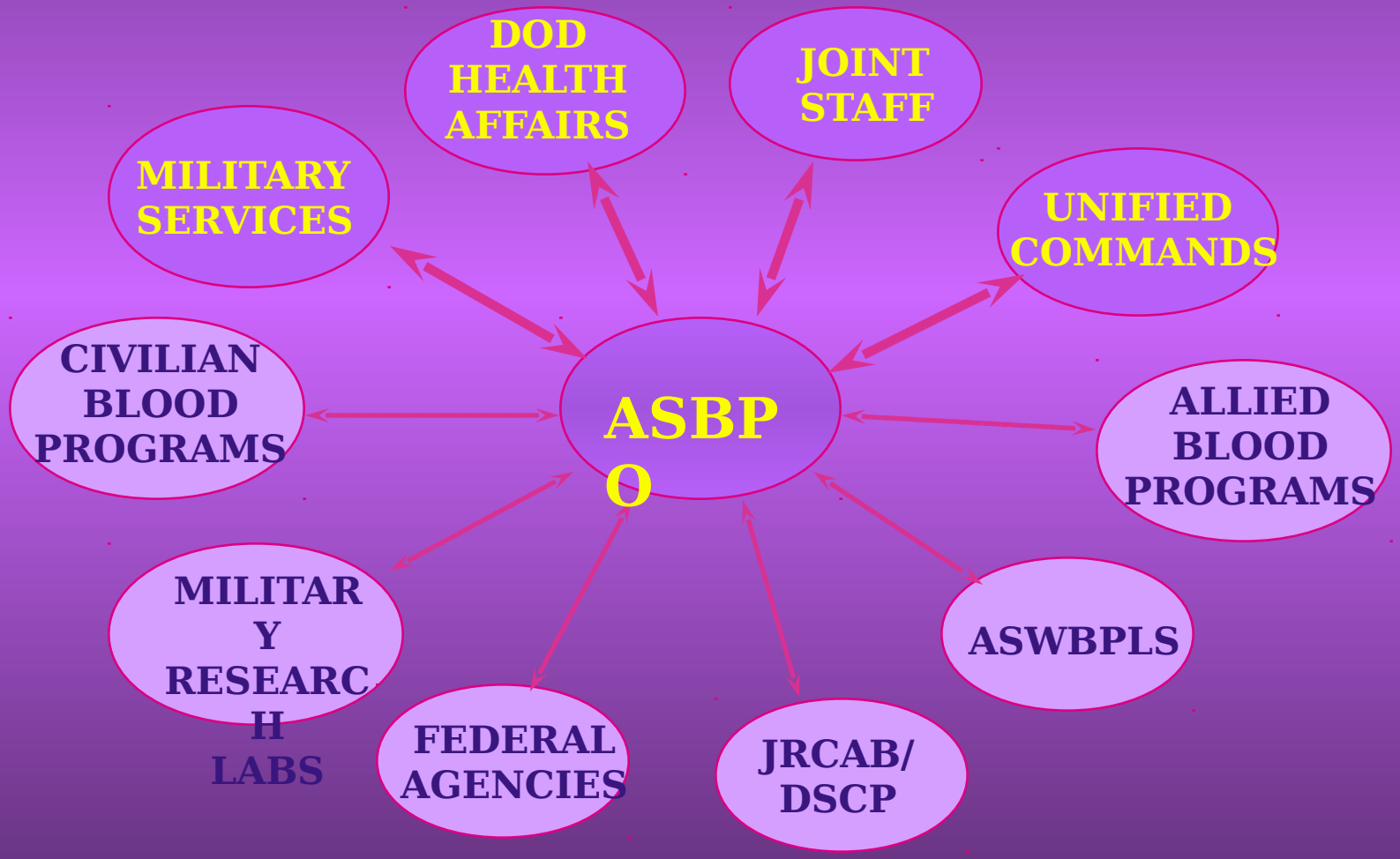
# ASBPO VISION and MISSION

The Armed Services Blood Program Office (ASBPO), a DoD Joint Health Agency, Coordinates, for the Assistant Secretary of Defense (Health Affairs) and the Joint Staff, the Worldwide Blood Programs of the Military Departments and the Unified Commands in Peace and War. The ASD(HA) Provides Policy Guidance; the Joint Staff Gives Operational Guidance; the Army is the Executive Agent.

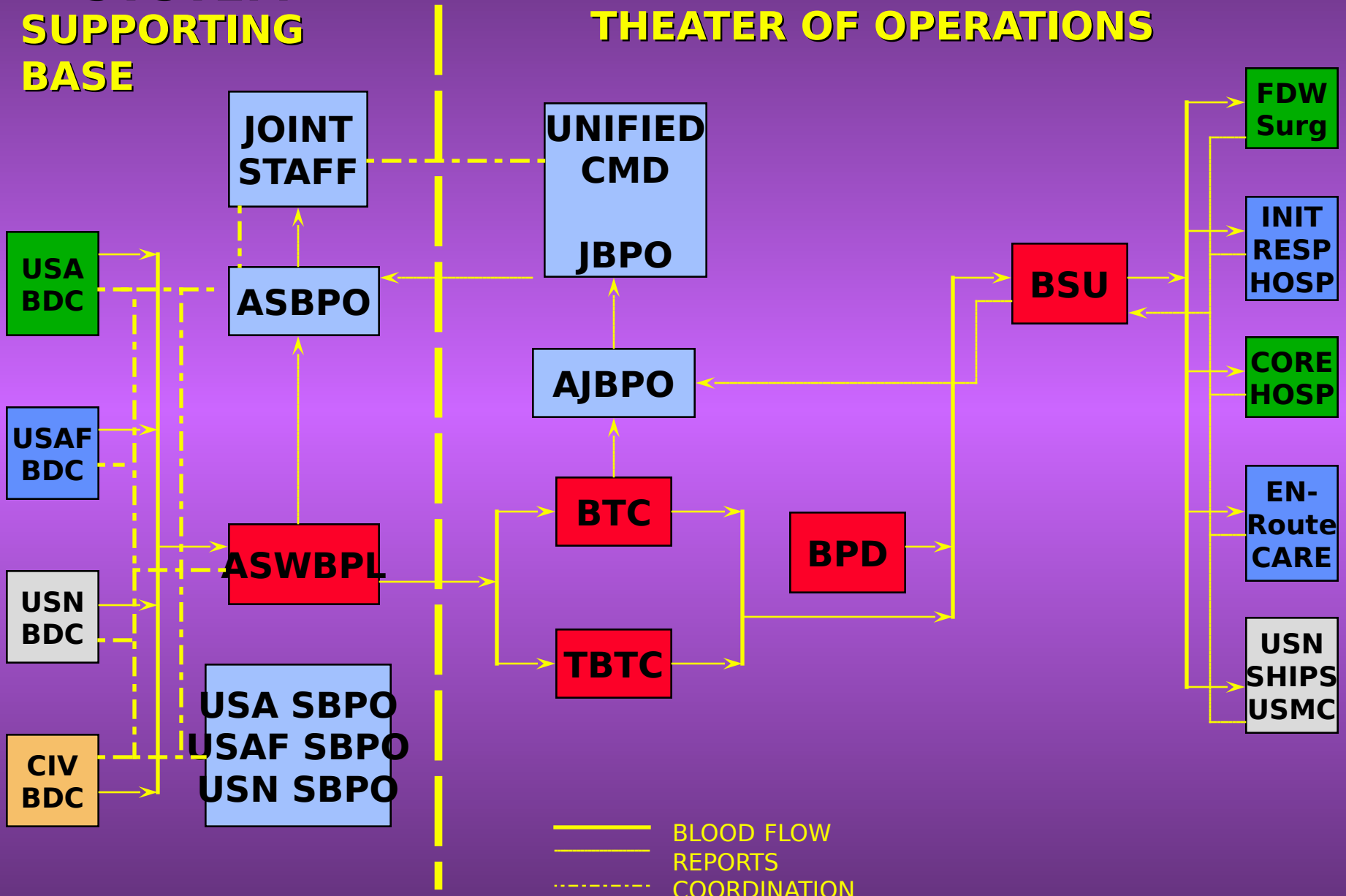
The ASBPO Through Its Coordination Role Will Ensure That Quality Blood Products, Blood Substitutes, and Blood Services are Provided to Improve Patient Care and Reduce Patient Risk for All Authorized Beneficiaries in Peace, Contingency, and War.

*ARMED SERVICES BLOOD PROGRAM*

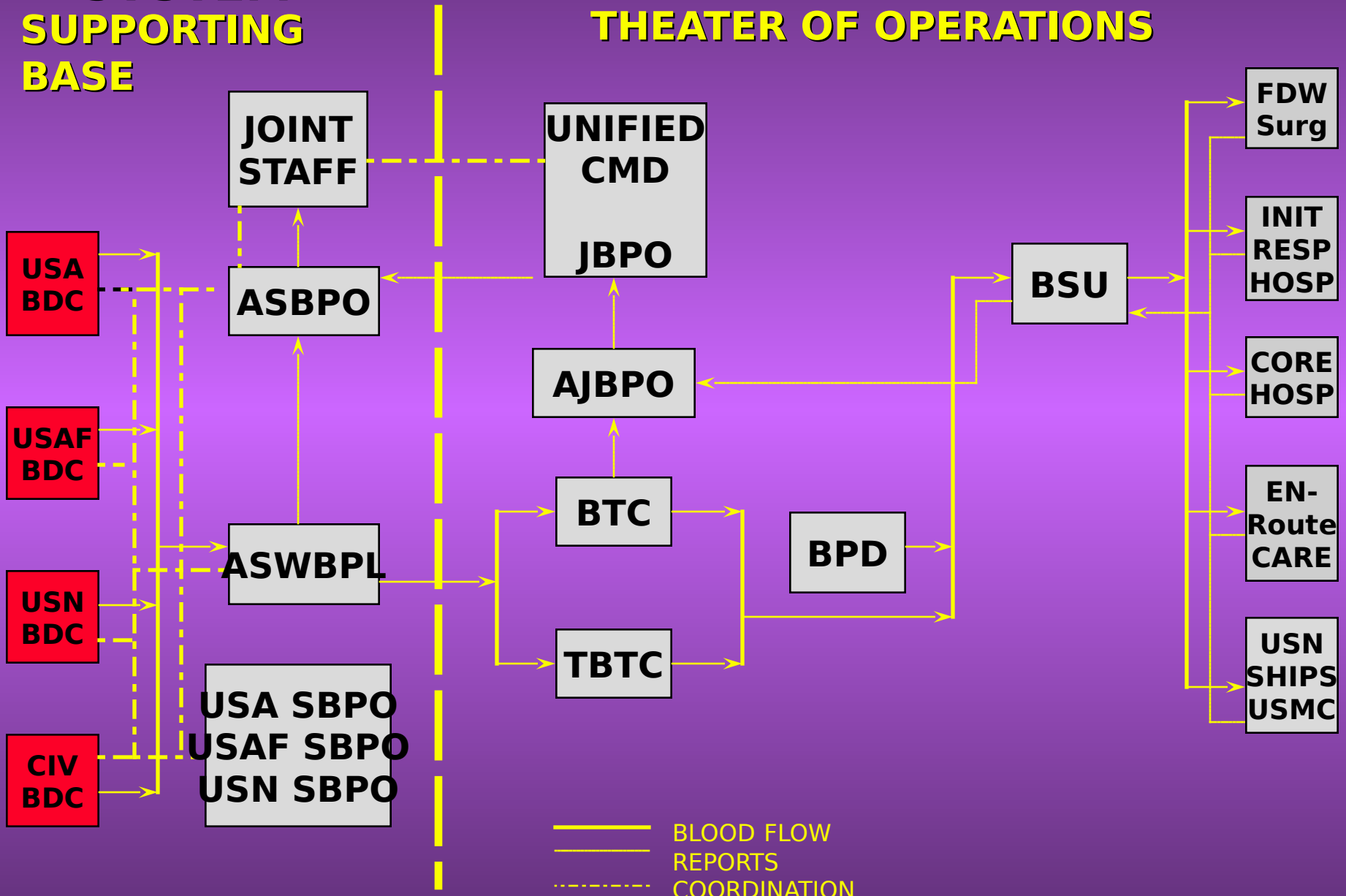
# Blood Program Coordination



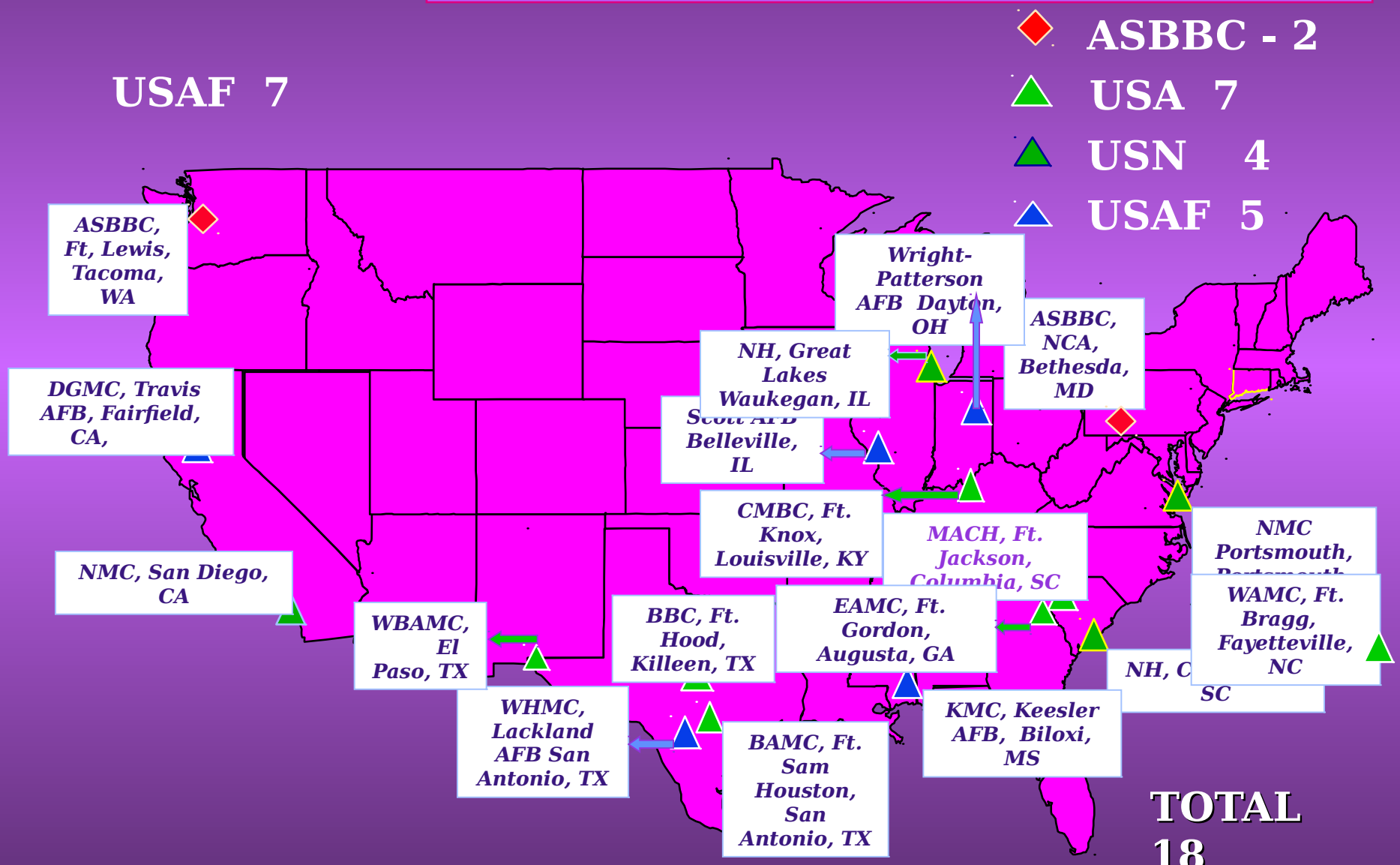
# ARMED SERVICES BLOOD DISTRIBUTION SYSTEM



# ARMED SERVICES BLOOD DISTRIBUTION SYSTEM



# CONUS Blood Donor Centers



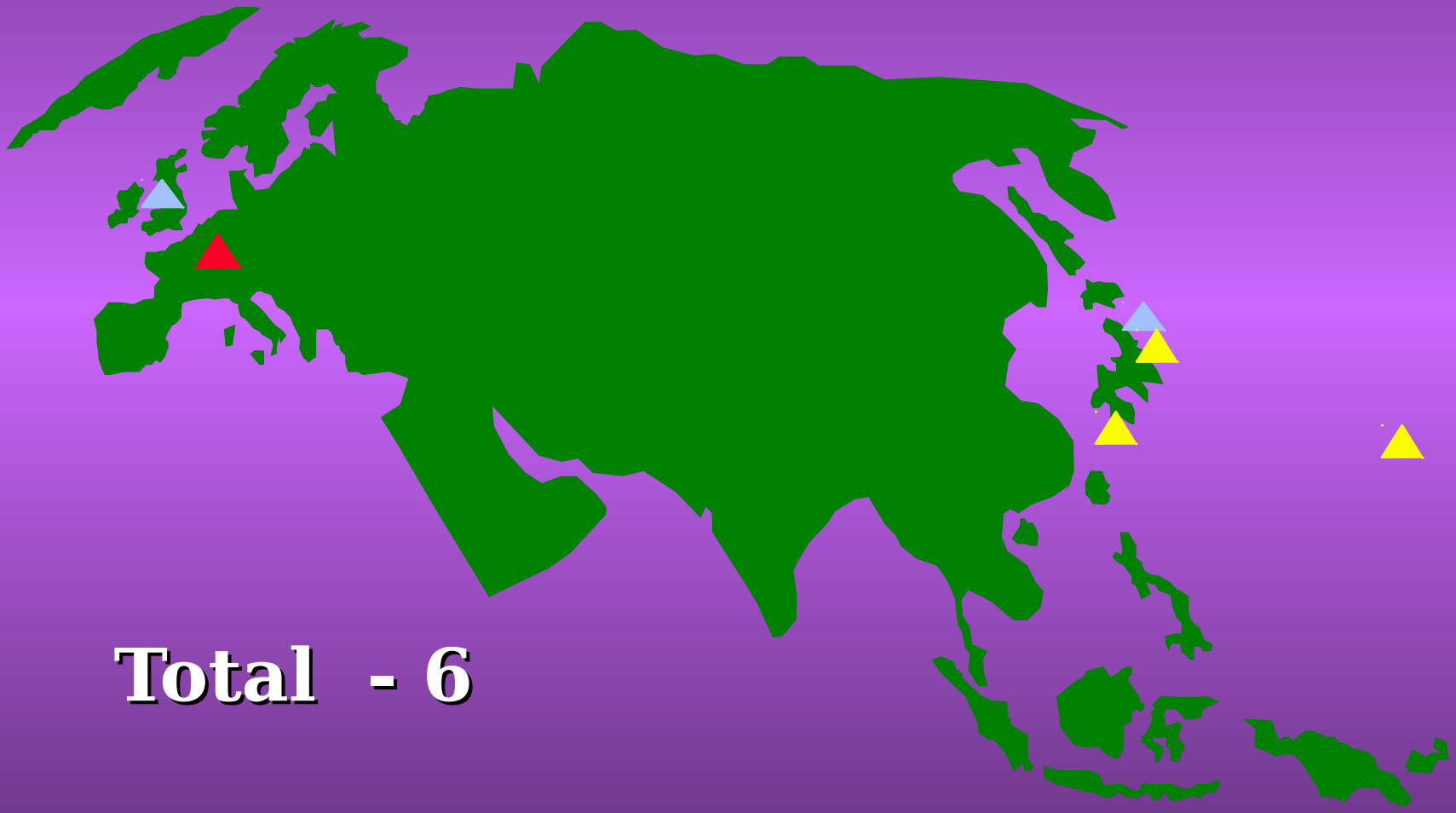
***ARMED SERVICES BLOOD PROGRAM***

# Armed Services Blood Donor Centers

- **Collect over 120,000 units per year from volunteers (Active Duty, Dependents, and DoD Civilians)**
- **Provides blood to meet peacetime needs and contingency/special operations requirements (Bosnia, Saudi Arabia, Haiti, Honduras, etc)**
- **Requires Command Support to encourage donations**
- **All blood donor centers licensed by the Food and Drug Administration**
- **Contingency Planning - 72 hrs minimum time from activation until first units available for shipment. Shelf stock available within 24 hrs**

# Armed Services Blood Donor Centers - Overseas

USA 1
USN 3
USAF 2



**Total - 6**

# Blood Products

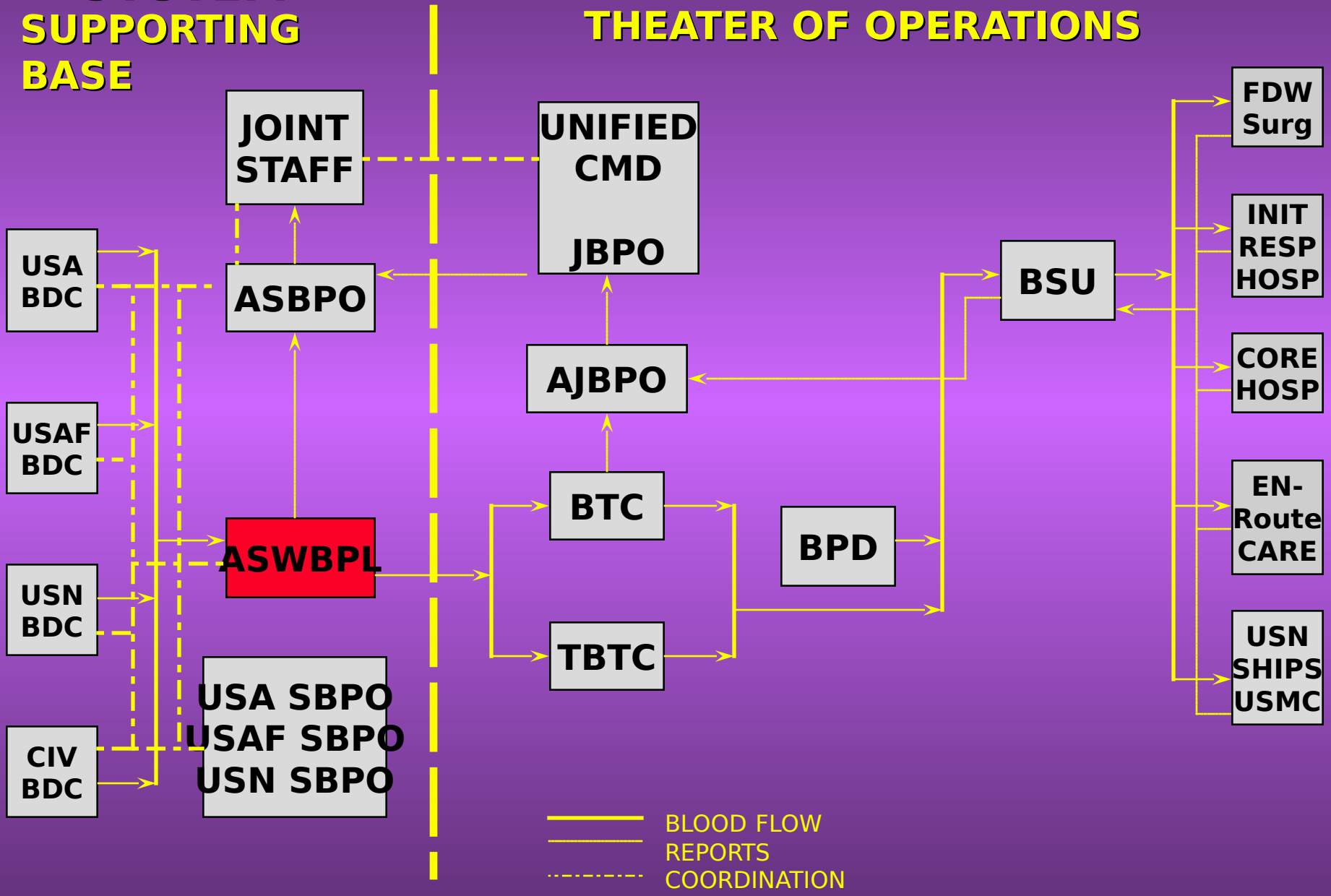
- **Red Blood Cells - Liquid**
  - **Expiration 35 Days (CPDA-1) or 42 Days (Additive)**
  - **Temperature 1 to 6C (Storage) or 1 to 10C (Shipment)**
- **Red Blood Cells - Frozen**
  - **Expiration 10 Years (Licensed) or 22 Years (Research)**
  - **Temperature < -65C (Storage) or < -40C (Shipment)**
- **Fresh Frozen or Solvent Detergent Plasma**
  - **Expiration 1 Year, Stored/Shipped At < -18C**
- **Platelets**
  - **Expiration 5 Days, Stored /Shipped At 20-24C**

# From Donor to Final Product

110,000 Blood Collections from Military, Dependents and DoD Civilians

Product Labeling

# ARMED SERVICES BLOOD DISTRIBUTION SYSTEM



# Armed Services Whole Blood Processing Laboratory (ASWBPL)

- **Locations**
  - ASWBPL East, McGuire AFB, NJ
  - ASWBPL West, Travis AFB, CA

Armed Services Whole Blood Processing Lab at Travis AFB, CA

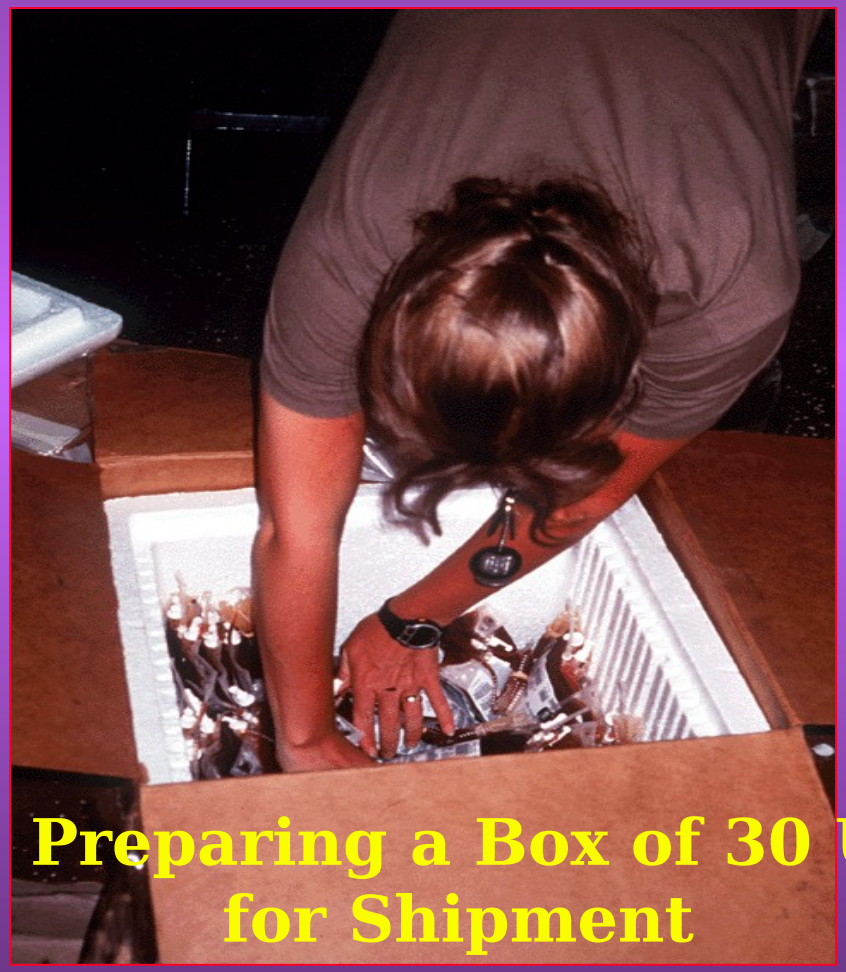
*ARMED SERVICES BLOOD PROGRAM*

# Armed Services Whole Blood Processing Laboratory (ASWBPL)

- **Functions**
  - **Confirm Blood Groups and Types, Product Labels**
  - **Contingency Storage 250 RBC Units Immediately Available, First Large Volume to BTC - 5 Days**
  - **Ship Blood Products to Unified Commands**
    - **7200 units per day**
  - **Store Frozen Red Blood Cells**

**Contingency Storage at McGuire AFB**

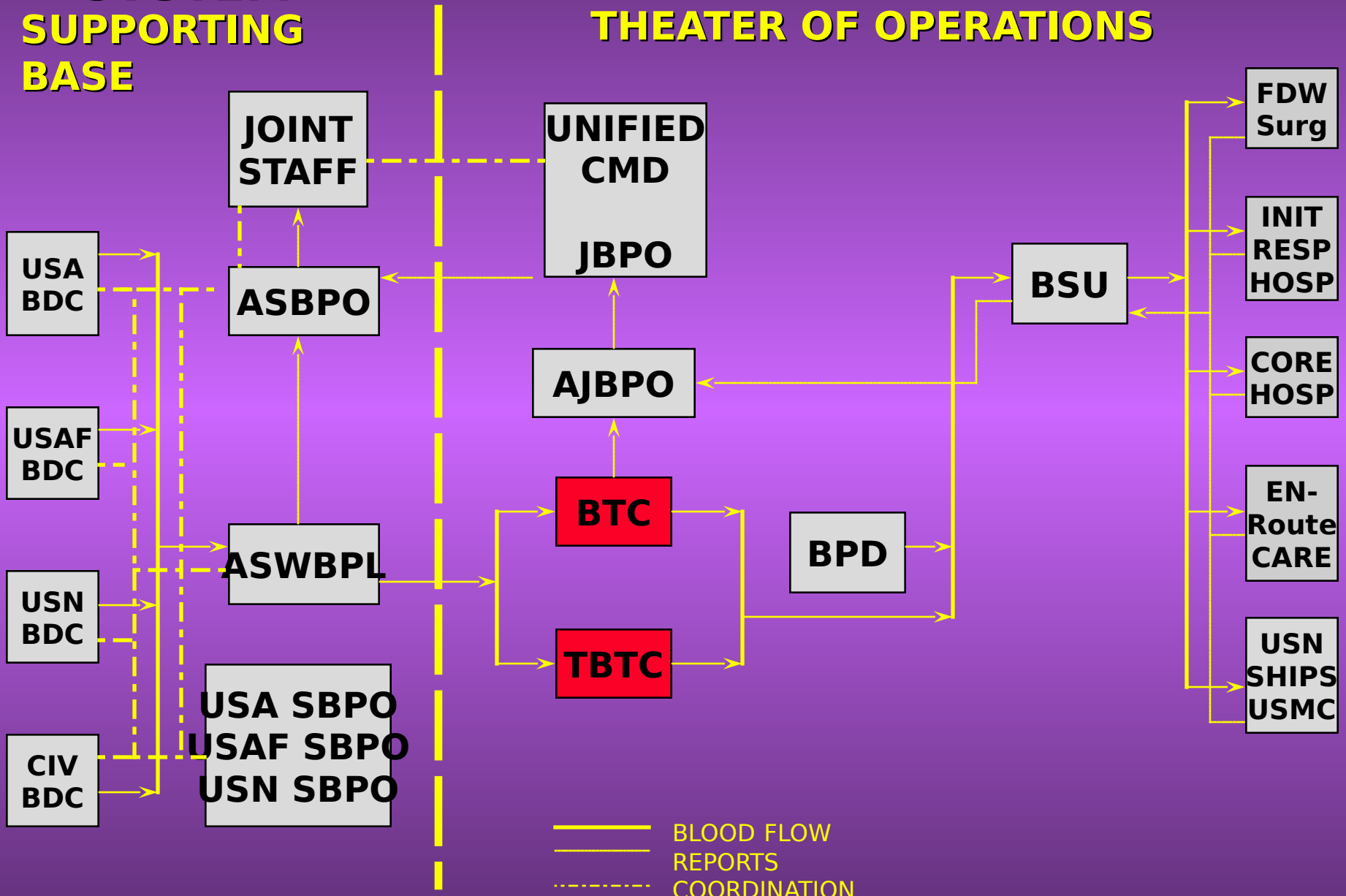
**Final Pallet Preparatio n at**



**Preparing a Box of 30 Ur for Shipment**

# Pallet Loading for Shipment into the Theater

# ARMED SERVICES BLOOD DISTRIBUTION SYSTEM



# Blood Transshipment Centers (BTCs / TBTCs)

- **USAF Operated**
  - **Usually Located at a Secured Theater Airfield**
  - **Supporting Commands May Operate BTCs**
- **Stores/Ships Up To 7,200 Units Per Day**
- **Functions**
  - **Central Receiving Point**
  - **Inspect Blood, Reice Blood, Store Blood**
  - **Issue Blood to Blood Supply Units**
    - **No transportation assets assigned!**
  - **Send Reports to AJBPO/JBPO**

Blood Transshipment Cente
Pallet Re-icing

# Transportable Blood Transshipment Center (TBTC)

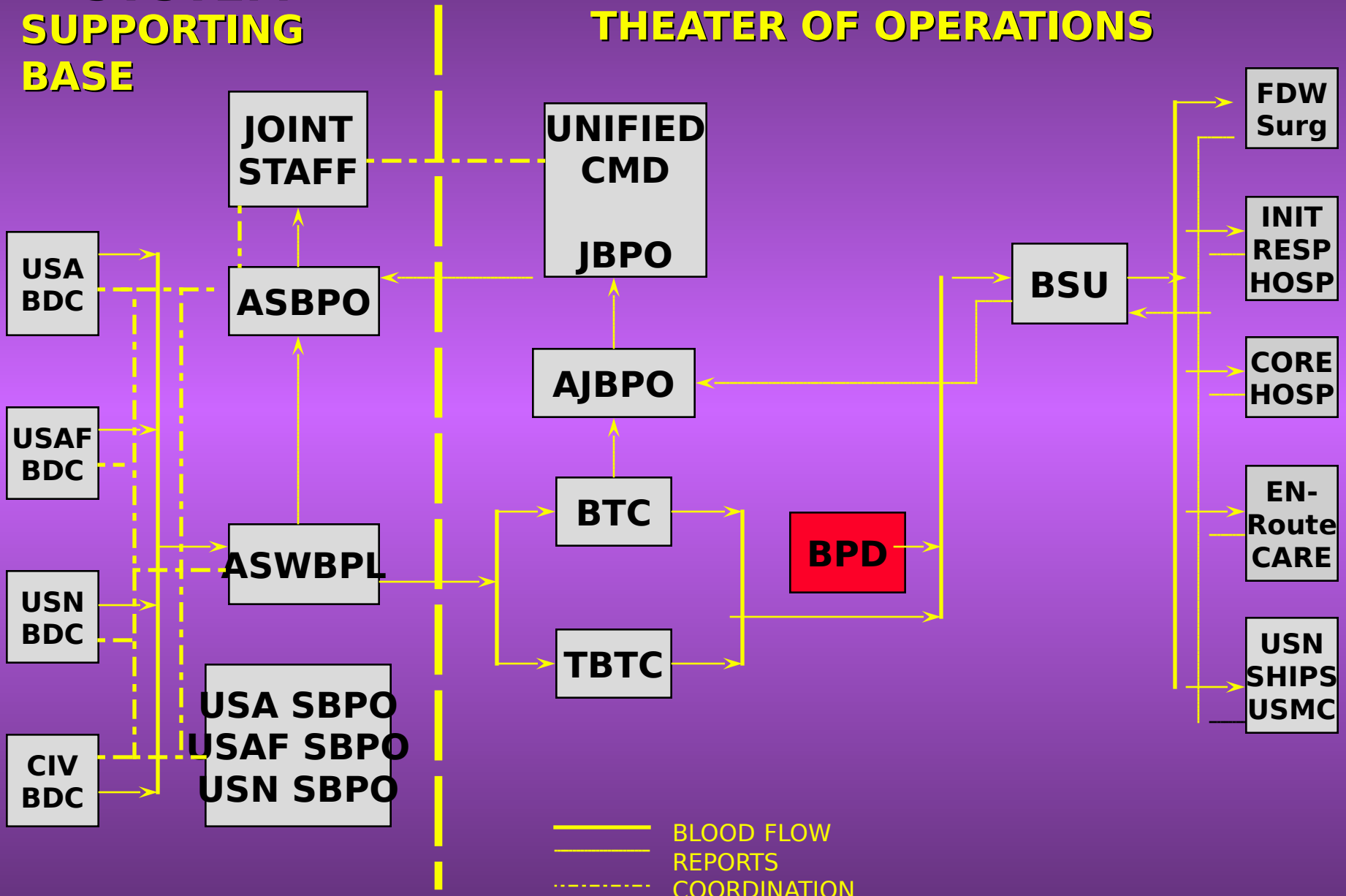
- 5 Total: 1 - PACOM, 2 - USAFE
  1 - USCENTCOM
  1 - USJFCOM/USSOUTHCOM
- Transportable via 1-C5, 3-C141, 7-C130 or 1-C17
- Modular Construction - Deploy Only What is Needed (Refrigerators/Freezers)
- Two Day Storage of Water and Can Make 1680 lbs of Ice Per Day

# Transportable Blood Transshipment Center (TBTC)

2 - 3600 Unit Refrigerators

TBTC Processing Tent

# ARMED SERVICES BLOOD DISTRIBUTION SYSTEM



***ARMED SERVICES BLOOD PROGRAM***

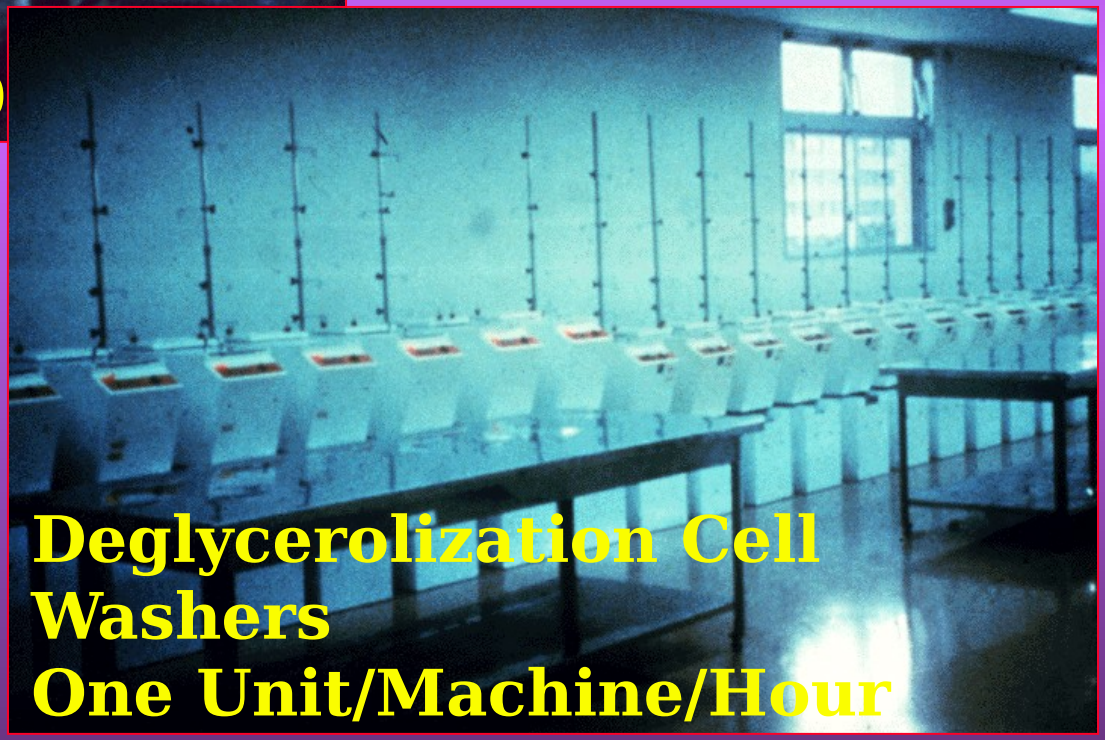
# Blood Product Depots (BPD)

- Component Operated / Managed by JBPO
- Function
  - Receive and Store Frozen Blood
  - Deglycerolize Frozen Blood
    - Activate 24 hrs for 3 - 10 Days
    - 1 unit/machine/hr (2 machines/Tech)
  - Distribute Frozen and Deglycerolized Blood

- Location
  - USPACOM (38,000)
    - Okinawa, Japan
    - Camp Carroll, ROK
    - Camp Humphreys, ROK
  - USEUCOM (6,100)
    - Sigonella, Italy
  - CONUS (15,100 )
- **Total – 60,000 Units**

# BPD at Okinawa

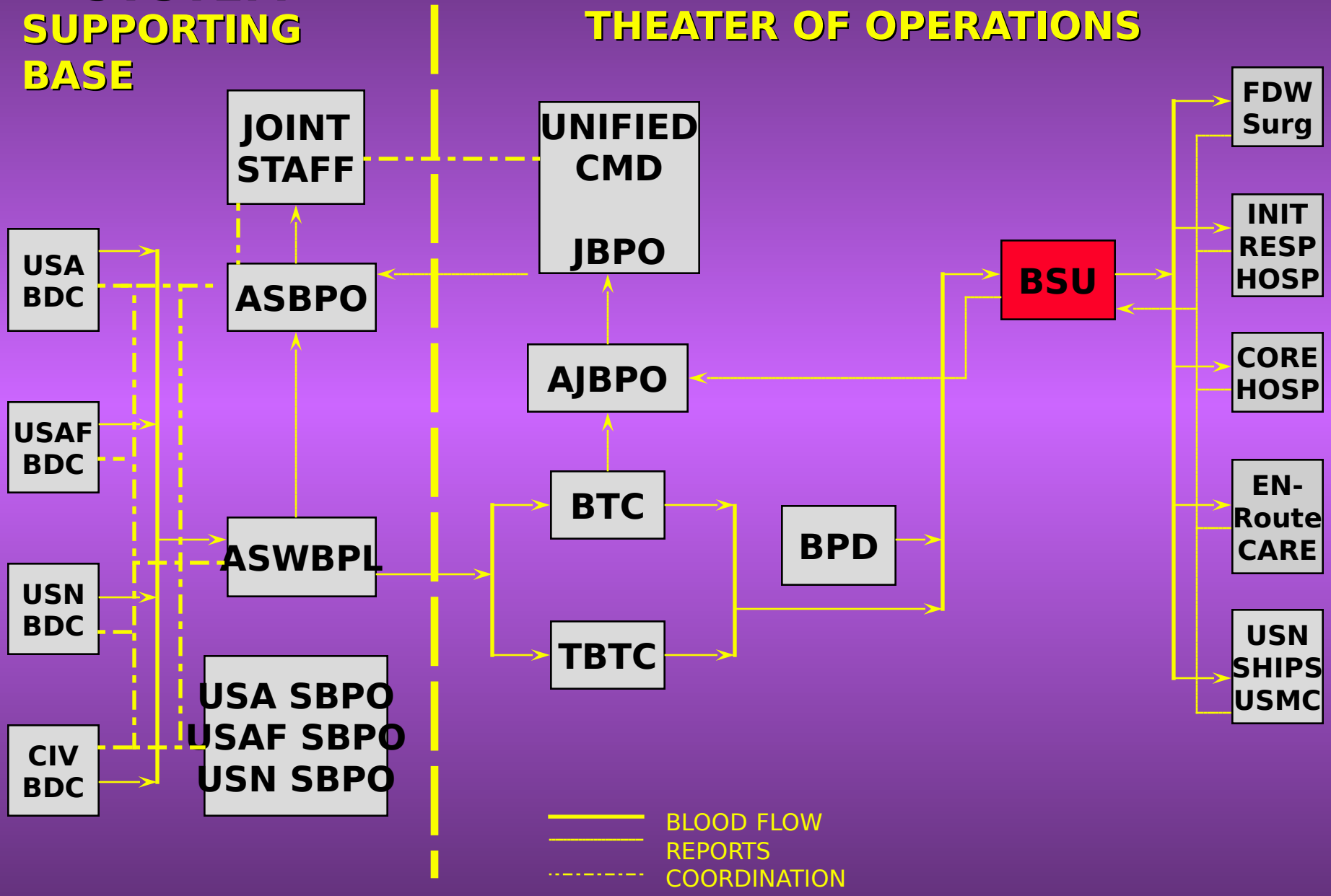
Storage Freezers
(<65°C)
Can hold up to 600 units of FRBCs/freezer



Deglycerolization Cell Washers
One Unit/Machine/Hour
Two Machines/Technician

Frozen
Blood
Training

# ARMED SERVICES BLOOD DISTRIBUTION SYSTEM

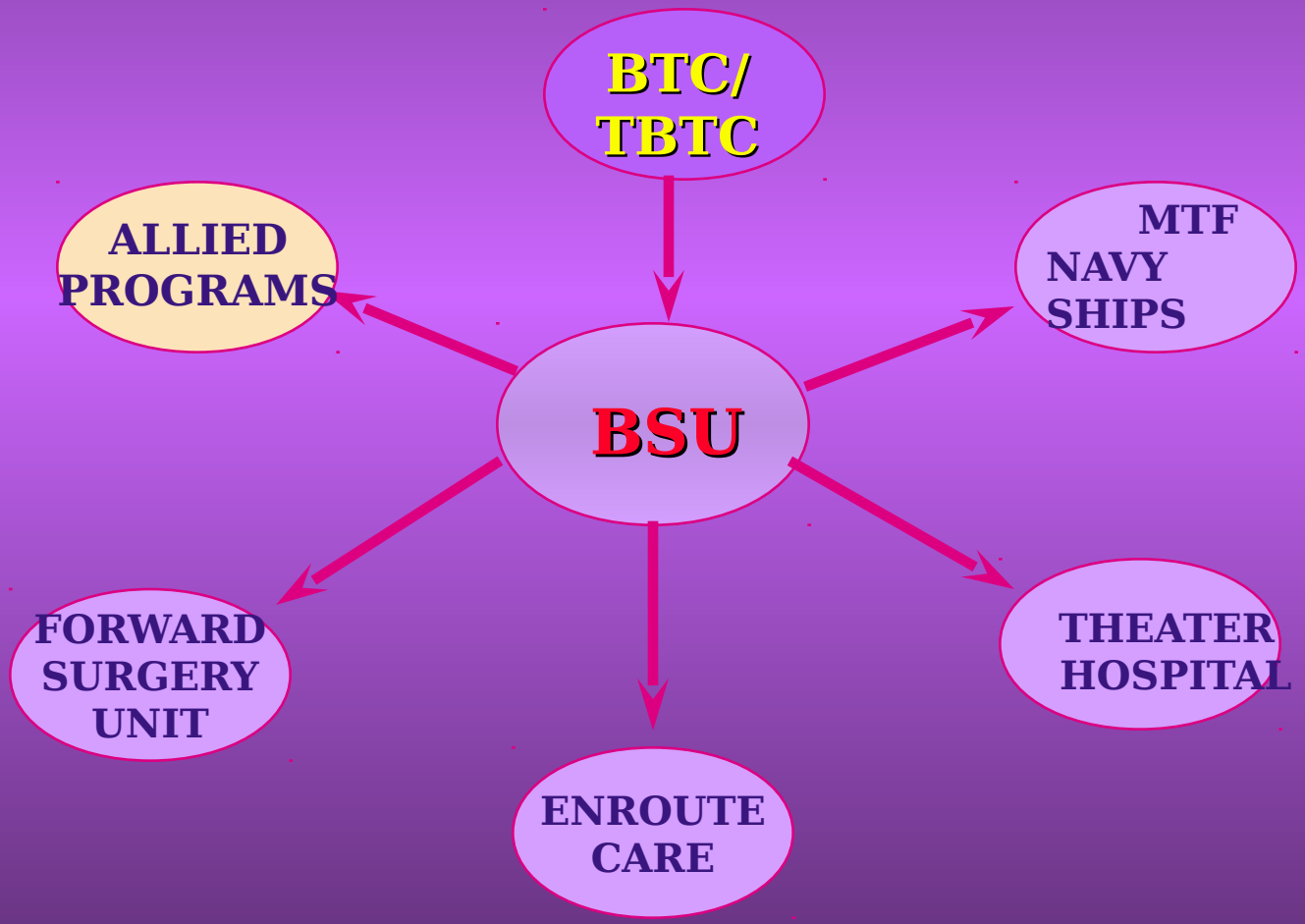


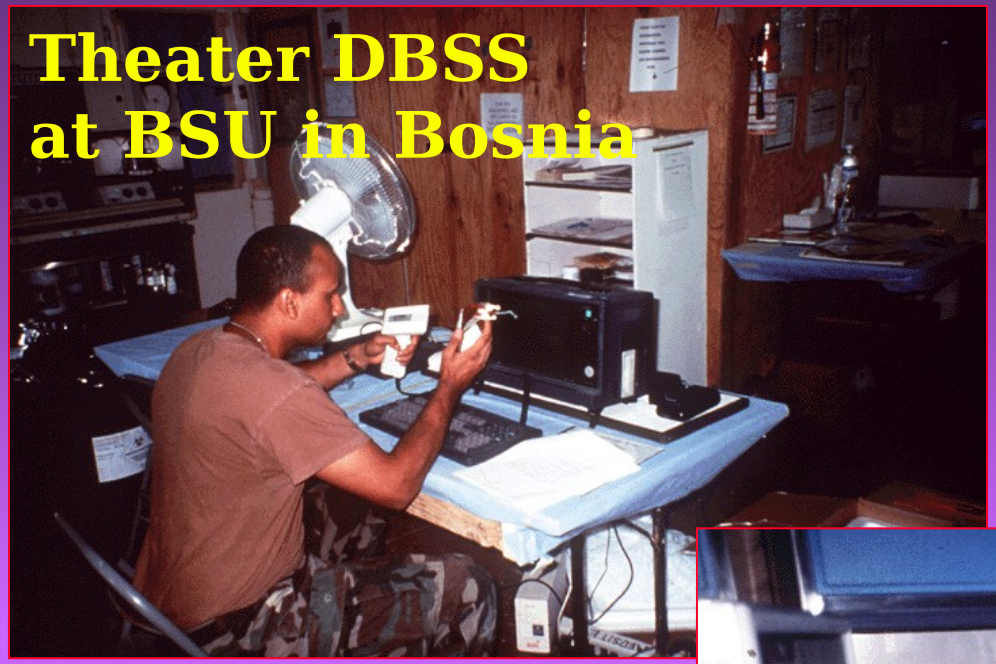
# Blood Supply Units (BSU)

- Component Operated
- Functions
  - Receive/Inspect Blood Products
  - Store and Reice Blood Products
    - Army Blood Detachment Stores Up To 3600 Units
  - Issue Blood Products to MTFs Within AOR
    - Transportation Assets Vary with Unit Designated
  - May Operate a Blood Product Depot (BPD)
  - May Collect Blood In Emergencies
  - Provide Blood Reports to JBPO / AJBPO

*ARMED SERVICES BLOOD PROGRAM*

# Component Area Blood Distribution





Theater DBSS
at BSU in Bosnia

Storage Capability at BSU in Bosnia

*ARMED SERVICES BLOOD PROGRAM*

# Blood Product Transportation

- **Air - Strategic**
  - **463L Pallet - 120 Boxes / 3,600 RBC Units**
  - **2.64 Short Tons/Pallet - TPFDD Planning Factor**
- **Air - Tactical**
  - **Fixed Wing**
    - **463L Pallet - 120 Boxes / 3,600 RBC Units**
    - **Container Delivery (CDS) - 48 Boxes / 1,440 Units**
  - **Helicopter**
    - **UH60 - 50 Boxes (Inside) / 48 Boxes (Slingload)**
    - **UH-1 - 30 Boxes (Inside) / 40 Boxes (Slingload)**
- **Ground**

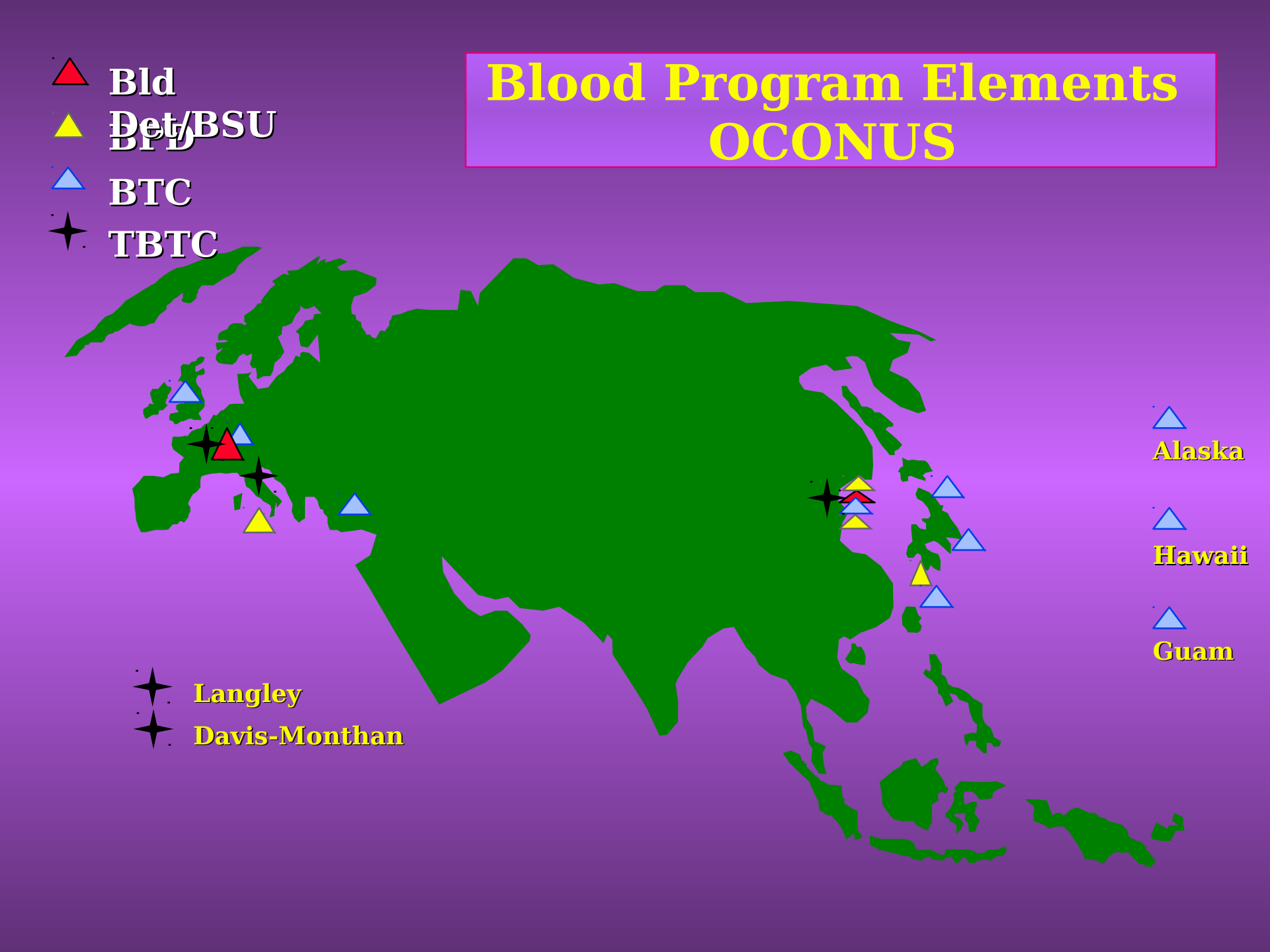
# Container Delivery
# Drop Shipments

## Container Delive

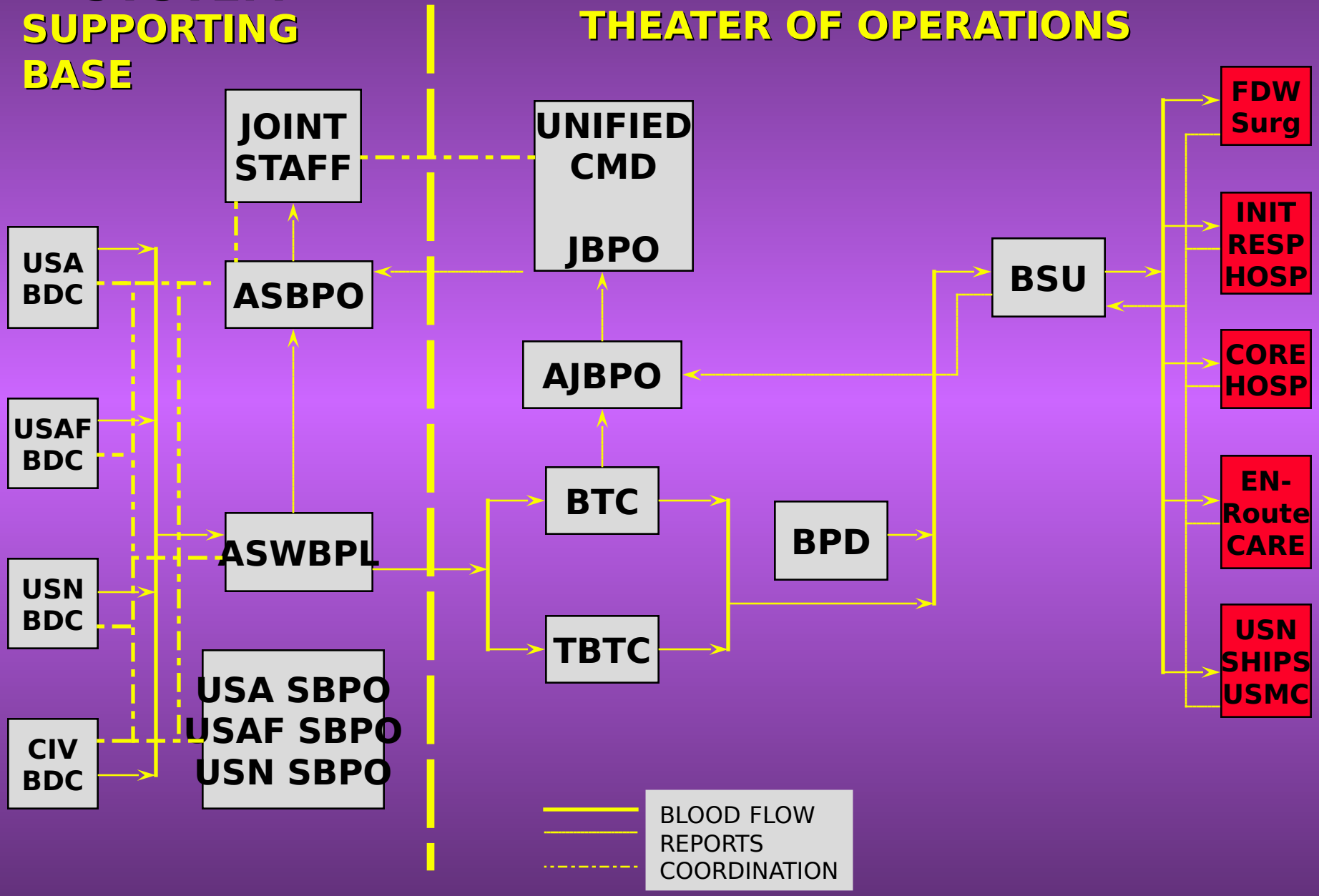
Slingload by MEDLOGBN, BSU

Helicopter Delivery by BSU in Bosnia

# Blood Program Elements OCONUS



# ARMED SERVICES BLOOD DISTRIBUTION SYSTEM

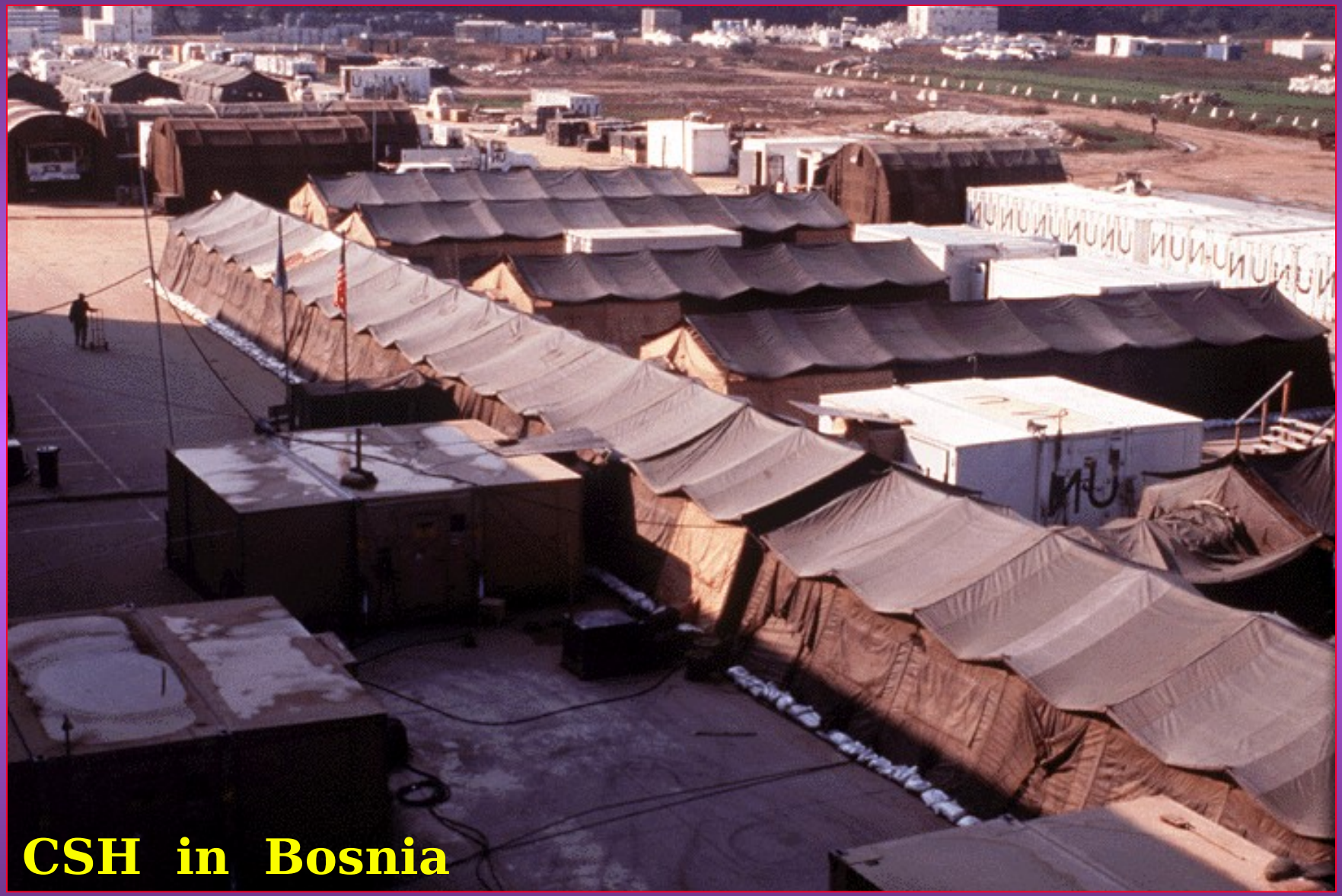


# Medical Treatment Facilities (MTF)

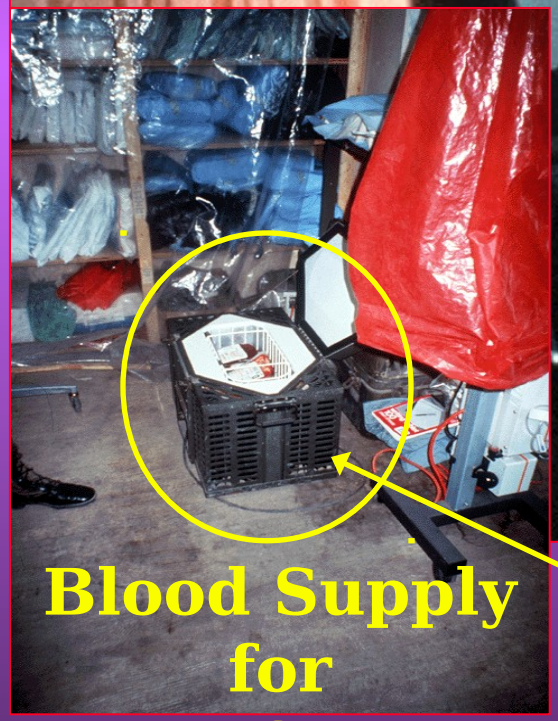
- **Component Operated**
  - **Functions**
    - **Receive and Inspect Blood Products**
    - **Store Blood and Blood Products**
    - **Crossmatch Blood (Theater Hospital)**
    - **Transfuse Blood and Blood Products**
  - **Blood Storage**
    - **30-50 Units PRBC (Type O) per FWD Surg Unit**
    - **480 Units PRBC (ABO Mix) per DEPMEDS ISO**
  - **Blood Reports**
    - **Sent to AJBPO/JBPO via DBSS into JTAV or message**

**Causality Treatment Ship**
**may serve as a BSU**

**Hospital Ship**


CSH in Bosnia

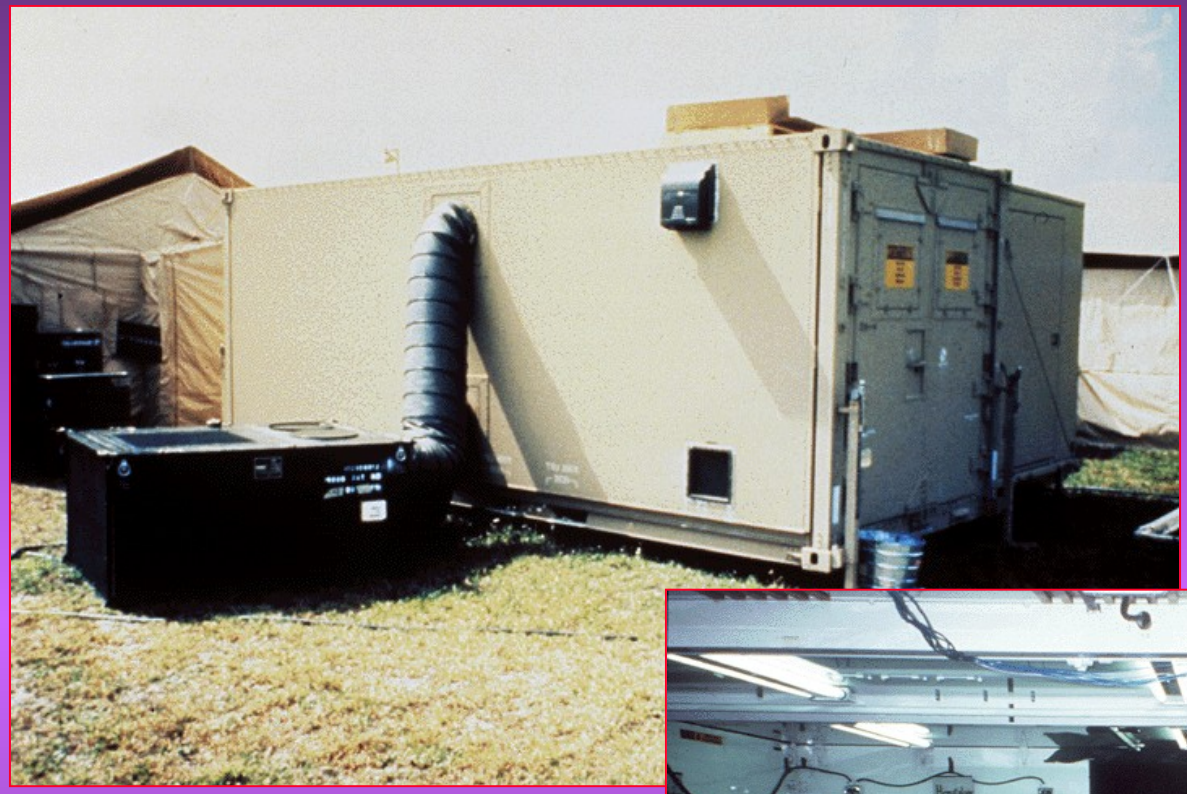
# Forward Surgery Team
# Operation Joint Endeavor



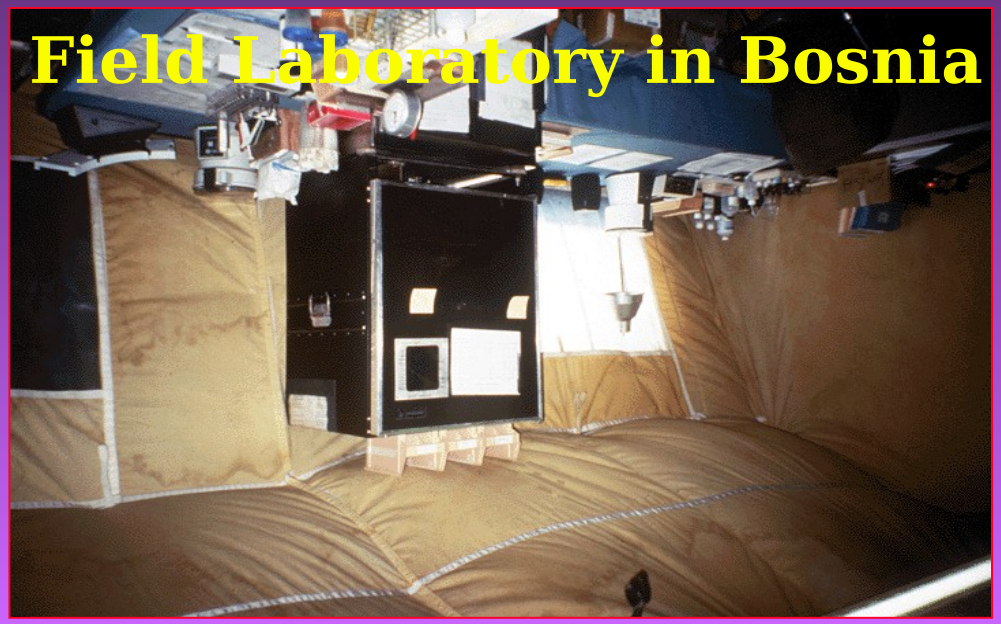
**Blood Supply for FST**

**Thermocooler Holds 18u/RCs**
**Plugs in for Cooling**

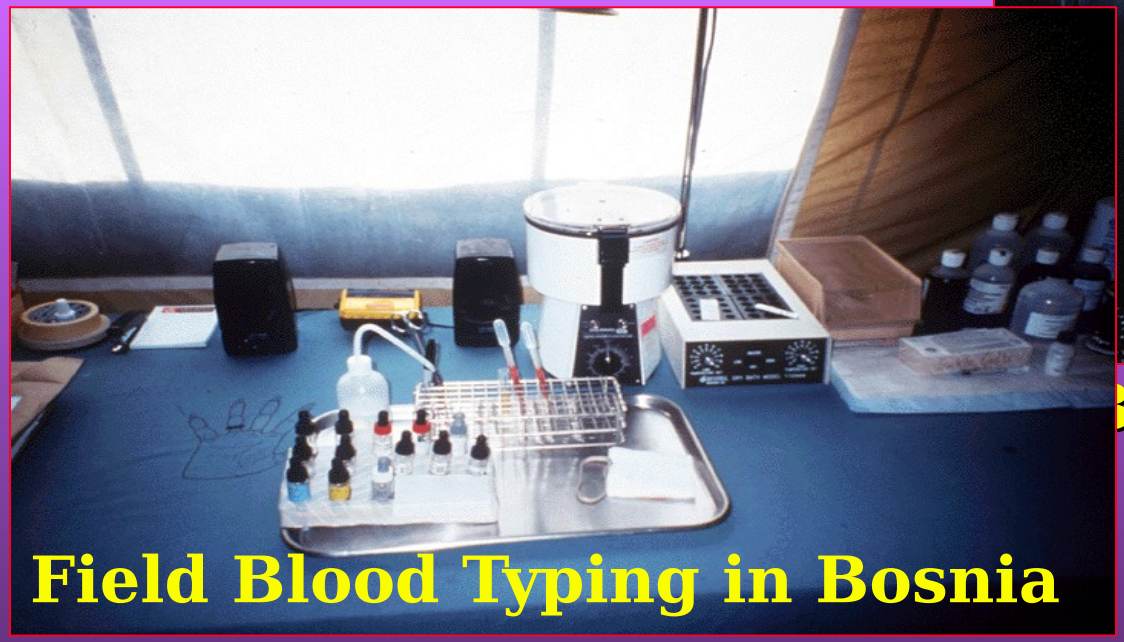
# DEPMEDS Laboratory IsoShelter



Field Laboratory in Bosnia



DEPMEDS
Blood Storage
Capability



Field Blood Typing in Bosnia

# BLOOD BANK PROCEDURES BY TREATMENT LEVEL

| TREATMENT LEVEL | BLOOD PRODUCT | ABO & Rh GROUP | TRANSFUSION SERVICE PROCEDURES | STORAGE CAPACITY | BLOOD SUPPLY |
|---|---|---|---|---|---|
| 1st RESPONSE | NONE | NONE | NONE | NONE | NONE |
| FORWARD SURGERY | RED BLOOD CELLS | O Rh + - | NONE | 50 UNITS RBC PER MED FLD REFRIGERATOR | BSU OR THEATER HOSP |
| THEATER HOSPITAL CSH FH Ships EMEDS + 25 | RED BLOOD CELLS | O, A, B Rh + - | ABO/Rh GROUP. PATIENT AND DONOR RBCs ** IMED. SPIN CROSSMATCH | 480 UNITS LIQUID RBCs CSH/ATH/FH 840/LHD/LHA 2000/Hosp Shp | BSU |
| | FROZEN/ DEGLYCEROLIZED RBC* | O Rh + - | N/A | 400 UNITS FROZEN/ LH or Hosp Shp | BSU OR BPD |
| | FRESH FROZEN PLASMA (FFP)* | A, B, AB Rh + - | N/A | 20 UNITS | BSU |
| | PLATELET CONCENTRATE* | 0, A Rh + - | N/A | 5 UNITS | BSU |

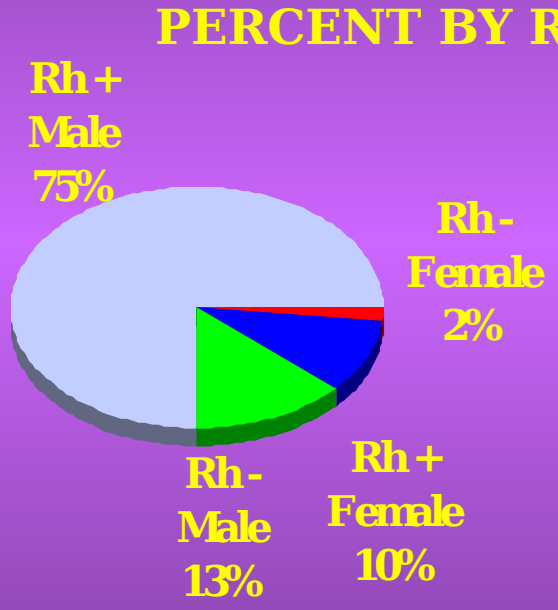
DEFINATIVE CARE IN CONUS MTF OR OTHER MEDICAL CENTER WITH BROAD TRANSFUSION MEDICINE CA

* NOT AVAILABLE AT EVERY MTF ** NOT NECESSARY IF ASWBPL HAS VERIFIED THE ABO

*ARMED SERVICES BLOOD PROGRAM*

# Emergency Transfusions at the Second Echelon of Medical Care

- During contingencies, the Services will provide Rh negative packed cells to Rh negative male and female patients based on the Rh blood type on the ID card or Tag
- Rh negative inventory usually provided at 15-20% of Total Blood Requirements




Rh+ (Rh POSITIVE) Rh- (Rh NEG
AS OF DEC 1993

# HOW DO I GET BLOOD ?

- **For initial deployment of a CSH, EMEDS or if blood is in tasking order:**
  - **Local MTF: need MOU to establish minimum level to keep on hand at all times**
  - **If local MTF cannot provide: contact Service Blood Program Office**
    - **Army — (703) 681-0360**
    - **Navy — (202) 762-3434**
    - **AF — Bolling AFB, (202) 767-5544**

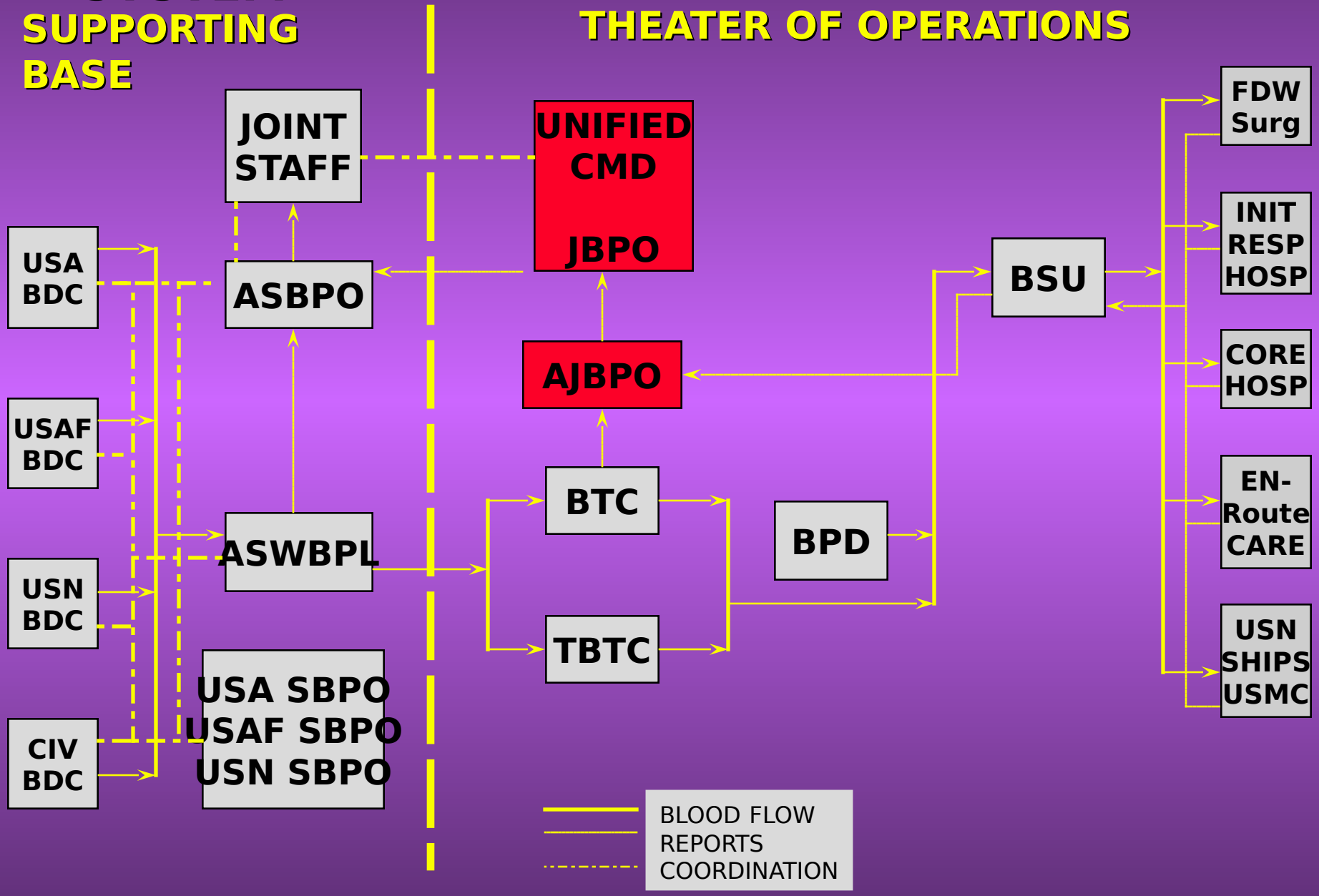
# HOW DO I GET BLOOD ?

- **For Contingencies and OCONUS exercises: identify requirements and resupply schedule to the JTF Surgeon/Unified Command Surgeon and Unified Command JBPO**
- **For Contingencies: blood is supplied from ASWBPL before departure or just after arrival. Resupply (30 days) to AF Airheads or Major Airline Destinations**

# Reporting Requirements

- **Reports - USMTF Formats - Use/Format Specified By JBPO**
- **Blood Report (BLDREP)**
  - **Inventory, Blood Requested, Expiring Products, 7 Day Estimate**
  - **Report to Supplying Unit and JBPO**
- **Blood Shipment Report (BLDSHPREP)**
- **Communication Modes - Dependent on Classification**
  - **Autodin**
  - **Secure/Unsecure Phone - Voice Template - FAX**
  - **Automation - Satellite, EMAIL, DBSS / JTAV / JMAR**
  - **Courier**

# ARMED SERVICES BLOOD DISTRIBUTION SYSTEM



# Unified Command Joint Blood Program Office (JBPO)

- Command Surgeon's Staff
- Functions
  - Enforce DoD Blood Program Policies
  - Coordinate Component Blood Programs
  - Plan and Execute Blood Program Exercises and Operations
  - Single Manager - Theater Blood Distribution System
- Theater Reporting System
  - GCCS and JTAV from Facilities DBSS
  - Provides Blood Reports to ASBPO

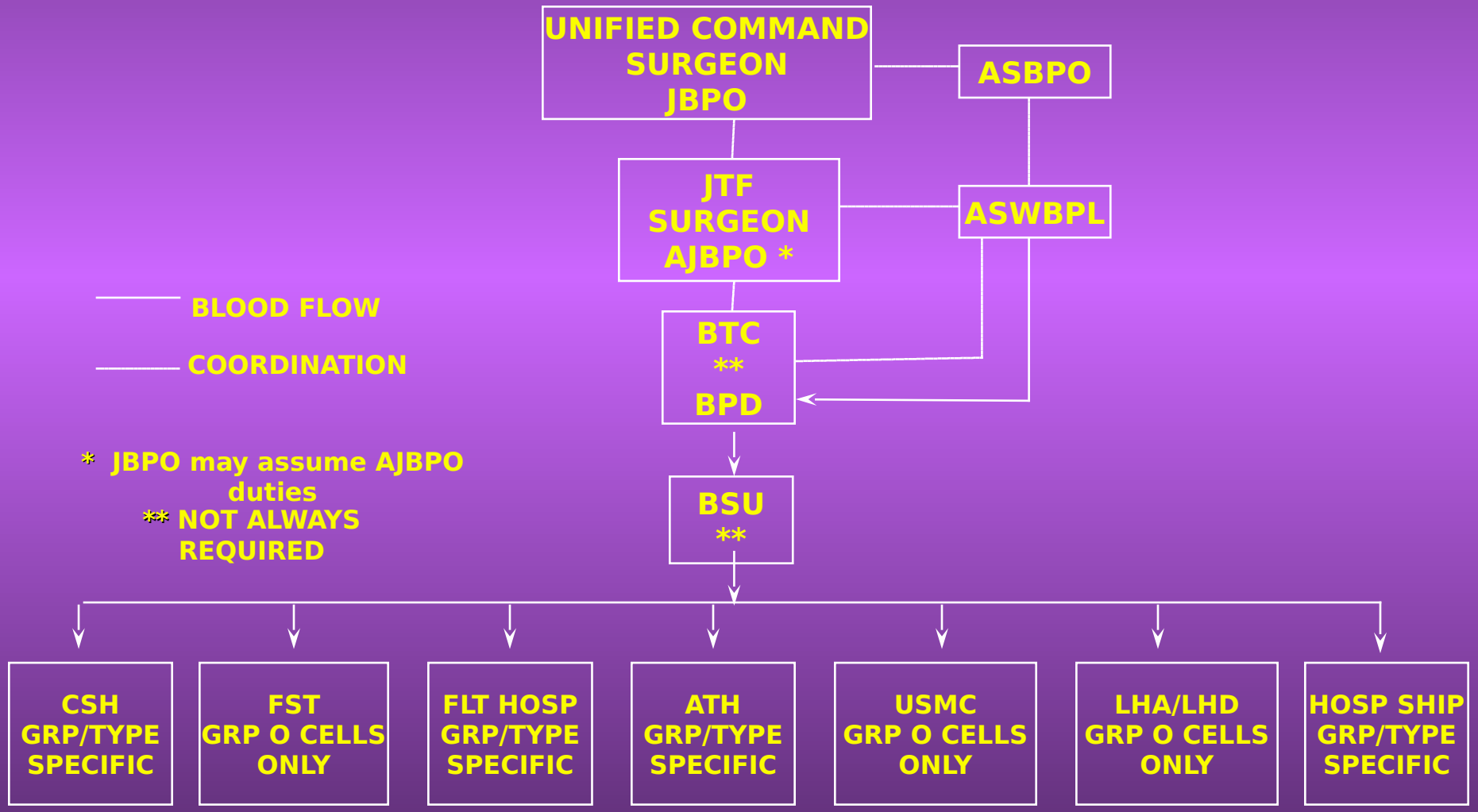
# Unified Command Joint Blood Program Officers

- **EUCOM – Stuttgart,**
  **011-49-711-680-7166/8317**
- **PACOM – Okinawa**
  **011-81-6117-437417**
- **USJFCOM - Norfolk, VA**
  **(757) 322-6371**
- **USCENTCOM –Tampa, FL**
  **(813) 828-5801**
- **USSOUTHCOM**
  **(305) 437-1328**

# Area Joint Blood Program Office (AJBPO)

- **Assigned Geographical Area by JBPO**
- **Functions**
  - **Enforce DoD Blood Program Policies**
  - **Coordinate Component Blood Programs**
  - **Plan and Execute Blood Program Exercises**
  - **Coordinate Blood Management with JBPO**
  - **Single Manager - Area Blood Distribution System**
  - **Provides Blood Reports to the JBPO**

# JOINT BLOOD PROGRAM
## CONCEPT OF OPERATIONS



# Appendix 2 to Annex Q to USCINC OPLAN

- **Assumptions - Joint Pub 4-02.1 Joint Tactics, Techniques and Procedures for Health Service Logistics Support in Joint Operations**
- **Concept of Operations - Most Important Section**
  - **Identify Needed Blood Program Elements (JBPO, TBTC, BSU, etc.)**
  - **Identify Blood Sourcing (Within Command, CONUS)**
  - **Reporting Requirements**
- **Tasks for Components and Supporting Commands**
  - **BTC (USAF) and BSU (Army Blood Platoon)**
  - **Support such as Transportation, Communications, Systems**
- **Blood Requirements, Shortfall, and TPFDD**
  - **Planning Factors in Joint Blood Program Handbook**

*ARMED SERVICES BLOOD PROGRAM*

# Source Documents

- **JOINT PUB 4-02, 26 April 1995**
  - **Doctrine for Health Service Support in Joint Operations**
- **JOINT PUB 4-02.1, October 1997**
  - **Joint Tactics, Techniques, and Procedures for Health Service Logistics Support in Joint Operations**
- **Operational Procedures for the Armed Services Blood Program Elements**
  - **TM 8-227-11, NAVMED P-5123, AFI 44-118**
- **Joint Blood Program Handbook**
  - **TM 8-227-12, NAVMED P-6530, AFH 44-152**

# Unified Command Daily Blood Requirements

- **Requirements Set By Unified Commands**
  - **USEUCOM**
  - **USPACOM**
  - **USCENTCOM**
  - **USSOUTHCOM**
  - **USJFCOM**
- **Planning Factors Used in MAT to Generate Requirements**
  - **4.0 Units PRBC Per WIA/NBI**
  - **.08 Units FFP Per WIA/NBI**
  - **.04 Units Platelets Per WIA/NBI**

# Strategic Planning

- **Medical Analysis Tool (MAT)**
  - **1 Unit RBC/WIA at E2, 2 RBC/WIA at E3, 1 RBC/WIA at E4**
  - **Only calculates requirements for E3 and E4**
  - **Must multiply final numbers by 1.33**
  - **Produces graphs and requirements tables**
  - **But only for E3 and E4**
- **Next version will capture E2 requirements**

*ARMED SERVICES BLOOD PROGRAM*

# Initial Call for Blood

**OPERATION or JTF (SG)**

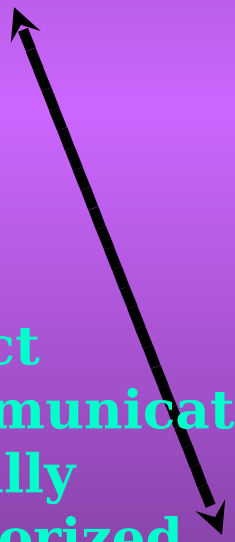
**UNIFIED COMMAND (JBPO)**

**JOINT STAFF**

**ASBPO**

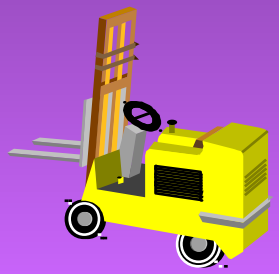
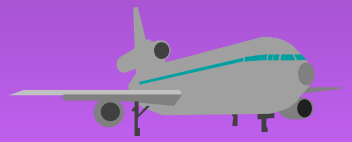
**ASWBPL**

**Direct Communication Usually Authorized**



# OPERATIONS OVERVIEW
# TIME CONSIDERATIONS

## DELIBERATE PLANNING

C-day | C+1 | C+2 | C+3 | C+4 | C+5 | C+6

ALD

EAD

**Date of Notification**

**Shelf Stocks from BDCs arrive at ASWBPLs**

**Available to Load D**

**Earliest Arrival Da**

**Latest Arrival Date**
**Required Delivery D**

*ARMED SERVICES BLOOD PROGRAM*

# Defense Blood Standard System - DBSS

- **Automated Information System for:**
  - **ASWBPL/BTC/TBTC**
  - **Blood Donor Centers Including Mobile Collection, Donor Deferral and Processing**
  - **MTF Transfusion Service and Inventory Operations**
  - **Supports Tracking of Blood Components, Blood Donors and Recipients (Look-Back)**
- **Blood Management and Reporting**
  - **Reports Pushed to JMAR/JTAV Servers**
  - **Can Push to Any IP Address Identified by JBPO**

# Research and Development Objectives

- **Minimize blood loss and optimize fluid resuscitation**
- **Develop and package blood products, and develop oxygen-carrying and coagulant products to minimize or eliminate storage and transport problems with far forward and shipboard use**

*ARMED SERVICES BLOOD PROGRAM*

# Research and Development

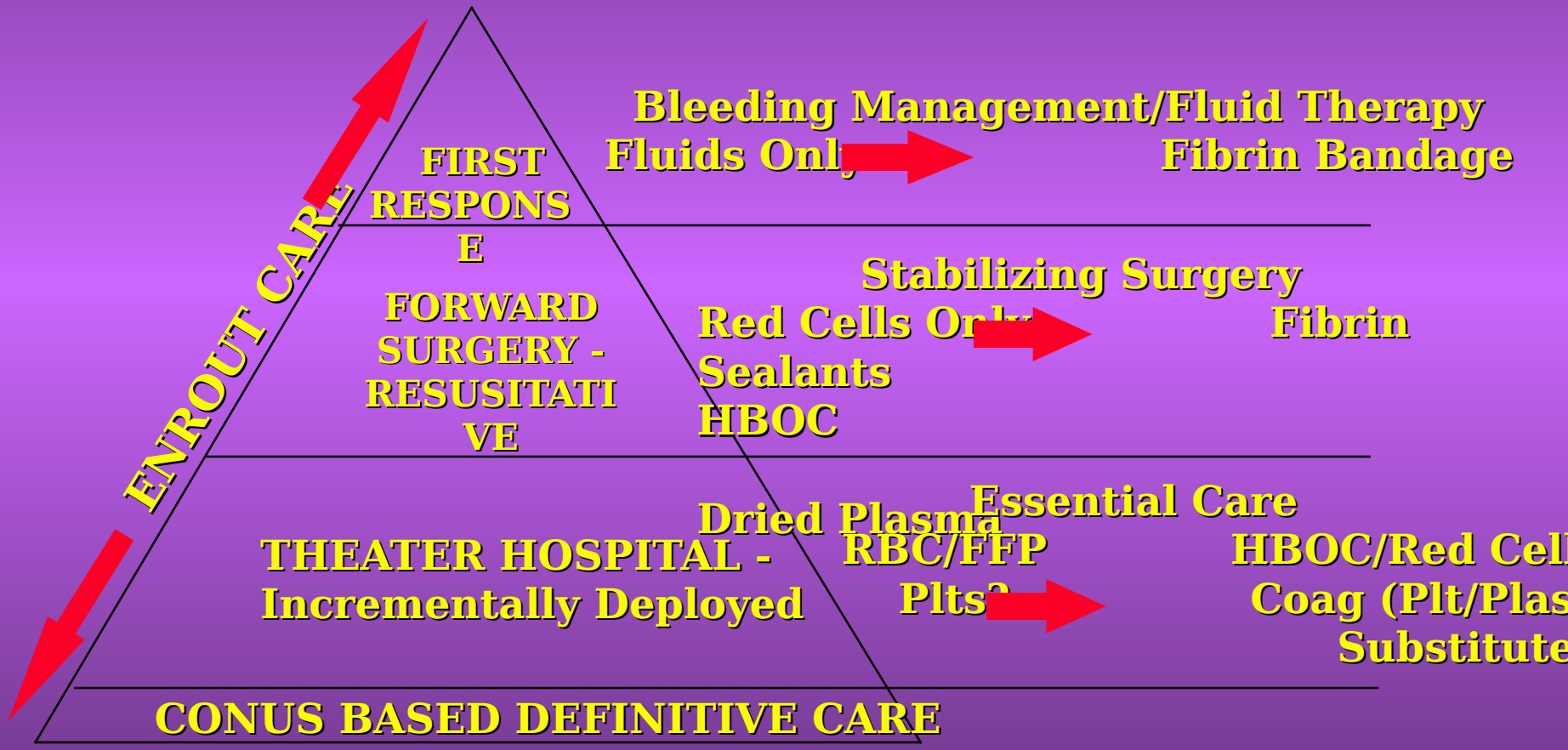
- **Thawed Blood Processing System - Automated & Closed System for Deglycerolization of Frozen RBC**
- **Platelets (Frozen, Lyophilized, Storage Solutions)**
- **Logistically Supportable and Safer Oxygen Carrier (HBOC)**
- **Reduce Requirements - Fibrin Glue Bandage/Sealant**
- **Freeze Dried Plasma**
- **Longer Shelf Life (10-16 Weeks) for PRBCs**

# Research and Development

| Product | Status |
|---|---|
| Thawed Blood Processing System | Milestone I/II Complete |
| Frozen Platelets | Submitted to the FDA |
| Frozen RBCs<br>22 years | Resubmitted to the FDA |
| Viral Inactivation | ??? $$$ |
| 7 year FFP | FDA Approved. DBSS must be updated |
| HBOC | 2 - 5 years |
| Hemostatic Bandage | 2 - 5 years |
| Rapid Viral Testing | 5 year DARPA Funded Program |
| Lyohpilized Oxyegn Carrier | ??? $$$$ |
| Lyophilized Platelets | ??? $$$ |
| Lyophilized Plasma | 3 Years Possibly |

# JV 2010 - Casualty Care & Management

## Casualty Care - Present and Future Capabilities



# Training

- **Joint Blood Distribution Course**
  - **Designed to ensure officers assigned to blood distribution positions are properly trained**
  - **Academic and exercise participation**
  - **Conducted at various locations**
- **Course Content**
  - **Services capabilities**
  - **Blood Program elements and distribution system**
  - **Annex Q plus exercise**
  - **ASBPO overview**
- **Contact 757-836-6382**

# Why We Are Still Here Today